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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,637	03/16/2004	Takashi Yashiki	250268US	1131

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EXAMINER

MORILLO, JANEL COMBS

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/800,637	Applicant(s) YASHIKI, TAKASHI	
	Examiner Janelle Combs-Morillo	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) 6-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 29, 2005 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by XP-002278686 (XP'686) optionally in view of teaching reference "ASM Handbook: Vol. 2" p 1169.

XP'686 teaches a high purity Ti alloy with 0.009% Fe max (see Table on bottom of 1st page). XP'686 does not mention the presence of Co or Nb, and therefore is held to teach substantially zero Co and Nb. XP'686 is drawn to a high purity titanium alloy also known as "iodide Ti" or "electrolytic Ti" (see XP'686, 1st paragraph), and though XP'686 does not specify the limits of Nb, and Co, the examiner points out that "ASM Handbook Vol. 2" p 1169 mentions that "iodide Ti" or "electrolytic Ti" have (strict) known impurity limits of Fe, Si, Ca, Cu, Mg, Mn, Sn, Zr, C, O, N, and Cl, with a balance consisting of Ti (see Table 49, all the elements added

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together =100.000 %). Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686.

Because XP'686 teaches a narrow range of Fe that overlaps the instant range "with sufficient specificity" (see MPEP 2131.03) and because Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686, it is held that XP'686 anticipates the instant claims.

Concerning dependent claim 2, XP'686 does not teach forming an oxide layer on said Ti alloy. Therefore, XP'686 is held to meet the limitation of a surface oxide film of 170Å or below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4, 5, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'573.

JP'573 teaches a pure titanium alloy building material sheet comprising (in weight%): 0.01-0.06% Fe (100-600 ppm Fe, abstract, claim 1 of JP'573). Additionally, JP'573 teaches examples with 105-571 ppm Fe in Table 1, which fall within the presently claimed range of Fe. JP'573 does not mention the presence of Co or Nb, and therefore is held to teach substantially

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zero Co and Nb. Because JP'573 teaches overlapping alloying ranges, it is held that JP'573 has created a prima facie case of obviousness of the presently claimed invention.

Concerning claims 17 and 18, JP'573 teaches said high purity Ti alloy is used as a building material, such as roofing and outer wall material (see [0001]). Therefore, JP'573 meets the instant limitation of an external wall or reinforcing member of a building.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over XP'686 or JP'573 in view of JP10-008234 (JP'234). XP'686 and JP'573 are discussed above.

Neither JP'573 nor XP'686 mention the formation of an oxide coating. However, JP'234 teaches a method of forming an oxide coating on a titanium alloy in order to prevent discoloration, wherein said oxide coating has a thickness of $\geq 20 \text{ \AA}$ (see examples, abstract), which overlaps the presently claimed limit of 170 \AA or below. It would have been obvious to one of ordinary skill in the art to form an oxide layer, as taught by JP'234, on the high purity Ti alloys taught by JP'573 or XP'686, because JP'234 teaches that said thin oxide layer prevents discoloration for a long period of time (abstract).

7. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over XP'686. XP'686 is discussed above.

XP'686 does not specify said high purity Ti alloy is used as an external wall or reinforcing member of a building. However, XP'686 teaches that said alloy is processed into sheet, and has a minimum YS of 130 MPa and minimum UTS of 270-350 MPa (2nd column, see Table). It would have been obvious to one of ordinary skill in the art to use said high purity Ti alloy sheet taught by XP'686 as an external wall or reinforcing member of a building, because XP'686 teaches said alloy has good strength properties.

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8. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over XP-002278686 (XP'686) optionally in view of teaching reference "ASM Handbook: Vol. 2" p 1169.

XP'686 teaches a high purity Ti alloy with 0.009% Fe max (see Table on bottom of 1st page). XP'686 does not mention the presence of Co or Nb, and therefore is held to teach substantially zero Co and Nb. XP'686 is drawn to a high purity titanium alloy also known as "iodide Ti" or "electrolytic Ti" (see XP'686, 1st paragraph), and though XP'686 does not specify the limits of Nb, and Co, the examiner points out that "ASM Handbook Vol. 2" p 1169 mentions that "iodide Ti" or "electrolytic Ti" have (strict) known impurity limits of Fe, Si, Ca, Cu, Mg, Mn, Sn, Zr, C, O, N, and Cl, with a balance consisting of Ti (see Table 49, all the elements added together =100.000 %). Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686.

Because XP'686 teaches an overlapping range of Fe, and because Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686, it is held that XP'686 has created a prima facie case of obviousness of the presently claimed invention.

Concerning dependent claim 2, XP'686 does not teach forming an oxide layer on said Ti alloy. Therefore, XP'686 is held to meet the limitation of a surface oxide film of 170Å or below.

Response to Amendment/Arguments

9. In the response August 29, 2005 applicant submitted various arguments traversing the rejections of record.

Applicant's argument that the present invention is allowable over the prior art of record because the prior art does not teach or suggest the presently claimed Nb and/or Co impurity

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maximum has not been found persuasive. The examiner's position is set forth above: the prior art does not mention the presence of Co or Nb, and therefore the prior art is held to teach substantially zero Co and Nb is present in said alloy composition. The examiner disagrees that applicant has provided conclusive evidence that JP'573 and XP'686 do not necessarily have the Nb and/or Co levels as claimed. Concerning XP'686, though Ti content is calculated by adding up all the listed impurities and subtracting from 100, because Nb and Co are not listed in said Table, they are expected not to be present as an impurity of said known iodide Ti or electrolytic Ti alloy, which is further supported by "ASM Handbook: Vol. 2" p 1169, which does not list Nb and Co as expected impurities. The composition of said alloy is held to be defined by the boundaries and elements given in said Tables.

When an invention is defined by providing ranges for the amount of the various components, a *prima facie* case of obviousness arises when the ranges of a claimed composition overlap the ranges disclosed in the prior art. See *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003); *In re Geisler*, 116 F.3d 1465, 1469, 1469 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *In re Malagari*, 499 F.2d 1297, 1303 (CCPA 1974). Where the "claimed ranges are completely encompassed by the prior art, the conclusion [that the claims are *prima facie* obvious] is even more compelling than in cases of mere overlap." *Peterson*, 315 F.3d at 1330. Even without complete overlap of the claimed range and the prior art range, a minor difference shows a *prima facie* case of obviousness. *Haynes Int'l v. Jessup Steel Co.*, 8 F.3d 1573, 1577 n.3 (Fed. Cir. 1993). In the instant case, a *prima facie* case of obviousness has been established because the prior art teaches an overlapping Fe range and wherein Nb and Co are not listed as expected impurities.

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With respect to the prima facie case of obviousness set forth by the examiner, Applicant has not clearly shown specific unexpected results with respect to the prior art of record or criticality of the instant claimed range (wherein said results must be fully commensurate in scope with the instantly claimed ranges, etc. see MPEP 716.02 d). Evidence of unexpected properties may be in the form of a direct or indirect comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and MPEP §716.02(d) - § 716.02(e).


Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCM
November 7, 2005


GEORGE WYSZOMIERSKI
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